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HUGE DRAGLINES TO BE AMONG NEW EXCAVATION EQUIPMENT

/Numbers in parentheses refer to list of sources appended./

The world's most powerful draglines will soon make their appearance with other Soviet excavation and earth-moving equipment, the 1949 production of which exceeded the 1940 figure 12 times. The new machines, the ESh 10/75 and the ESh 14/65, will follow the general lines of the American Marion 7800, but will be lighter and more efficient, being made nearly 70 percent from alloyed steel. Now being built at the Uralmash Plant, Sverdlovsk, they are designed for open-pit mining and excavation work on heavy construction projects.

The main body of the ESh 10/75 is about 20 meters long and 15 meters in height and breadth; the supporting base is 14 meters in diameter. There are separate motor-generator units, one for raising and lowering the bucket, the other for dragging.

The average productivity of the machine ranges from 650 to 1,200 cubic meters per hour, depending upon the various modifications which can be made to adapt it to working conditions. The length of the boom may vary from 55 to 75 meters, and the volume of the bucket, from 10 to 25 cubic meters.

The outstanding feature of the ESh 10/75 is its "walking" mechanism, embodying an entirely new principle. It consists of two shoes, parallel to the sides of the cab and about three-quarters its length, each attached to the body by a V-shaped pair of hydraulic cylinders. One cylinder of each pair is more powerful than the other, and is used to raise the dragline from the ground. The second, less powerful cylinder moves the machine slightly forward or backward; the action of both cylinders then sets the machine down again, completing a step in the walking process. Oil, pumped by two separate electric motors, is the hydraulic medium for the cylinders.

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The projected ESh 14/65 dragline of the Uralmash Plant and the ESh 4/40 dragline made in the Novo Kramatorsk Plant imeni Stalin are to be used on the irrigation project being carried out in the desert between the Aral and Caspian seas. (1)

During 1949 the production of excavators proper by the Ministry of Construction-and Road-Machine Building has been greater than the total production during the 5-year period preceding the war (2). The "Mashinostroitel'" Plant, Moscow, has fulfilled the Five-Year Plan for excavator production (3), and the Uralmash Plant has fulfilled its Five-Year-Plan quota in the excavator-assembly shop. (4) With the completion of an excavator in August, the Kovrov Excavator Plant completed its Five-Year Plan production quota. It has evolved a method which saves 245 kilograms of metal on every excavator. (5) The Leningrad Excavator Plant is modifying the E-252 excavator, rendering it simpler and more economical to manufacture. (6)

The SE-3 excavator built at the Uralmash Plant is expected to operate 4,700 hours per year and to have a useful life of 15 years. Its manufacture takes 21,000 man-hours, exclusive of secondary operations, service-shop time, semi-fabrication of parts, and other operations. (7)

Many excavators used in strip mining are now fully electrified. A standard 3-cubic-meter excavator has electric motors totaling 900 kilowatts' capacity. It can move [illegible],500-8,000 cubic meters of earth per day. (8)

Production at the Voronezh Excavator Plant is marked by unevenness and last-minute rushing to fulfill monthly quotas. In this matter and in institution of safety measures, the director, Sakhin, is acting independently of the plant trade union and Party committees. (9)

SOURCES

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2. Moskovskiy Bol'shevik, No 276, 24 Nov 49

3. Moskovskiy Bol'shevik, No 263, 6 Nov 49

4. Izvestiya, No 263, 6 Nov 49

5. Izvestiya, No 213, 9 Sep 49

6. Leningradskaya Pravda, No 257, 30 Oct 49

7. Voprosy Ekonomiki, No 11, Nov 49

8. Elektropromyshlennost' i ee rol' v razvitii narodogo khozaystva SSSR, 26 Oct 1949 (pamphlet)

9. Trud, No 276, 23 Nov 49

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